**Benjamin Lipman**

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# Summery

## 3D Graphics Generalist

* 12+ years 3D graphics production experience
* 12+ years writing plugins, scripts and designing production pipelines
* 3D app design for mobile devices (ios, android)

## Skills

Volumetric Data, Volumetric Rendering, Particles/Simulation, Image Processing, Realtime Simulations

## Software Skills

VFX Production: 3ds Max, Fusion, Nuke, VRay, MentalRay, Realflow, FumeFX, Pflow

Scripting: maxscript, python, mel, javascript

Libraries/ Languages: C++, C#, CUDA, Autodesk 3ds Max SDK , BlackMagic Fusion SDK, Foundry Nuke, OpenCV, OpenGL, OpenCL, DirectX, openmp, TBB, lua, boost, CGAL

Realtime: Unity 3D (C#), html5, webGL

# Work Experience

#### **Blipland Media, LLC** *Sole-Proprietor* **Sep 1999-current**

* **Thinkbox Software: XMesh MY, XMesh NK** 
  + Enabled efficient mesh caching and playback in major 3d animation and compositing applications (nuke, maya) by using c++ and python on windows, osx and linux.
  + Created more efficient playback during editing phase with proxy-mode using openGL to directly draw primitives or boundary representations instead of using full cache loading from disk.
* **Duke University: Biomedical engineering research animations**
  + Utilized custom volumetric rendering pipeline to produce animations directly from research data.
  + Showed probe device inside the body by combining real-time rendering pipeline of ray marching shaders with traditional polygon draws calls using openGL.
  + Converted graduate students’ mock-up models to professional quality models.
* **Floored.com:** **Bridging 3d content to webGL-based real-estate browser.**
  + Increased job compliance and reduced human error by 30% by directly connecting Blender and 3dsmax to their CMS system via a RESTful submission add-on and pre-rendering thumbnails.
* **3DVL, LLC: Content for Glasses-free 3D displays.**
  + Enabled Start-up Company to produce content for their invention both offline and online by interleaving multiple camera feeds through glsl shaders.
* **Autodesk, Inc.: “*Normal Bump”* feature shipping in 3ds max 7 and higher.**
  + Let users add perceived detail to meshes by specifying a normal map, written in c++.

#### **Anatomical Travelogue, LLC** *dba*thevisualmd.com*Senior Staff* **Nov 2001- Jun 2013**

* Clients include: **Autodesk, Johnson & Johnson*,* Amgen, TedMed, Bayer, Mars*,* Novartis,and Ethicon**

**Technical Director/Generalist** (2001-2007)

* Increased output by 500% over two years, growing animation department from 5 to 30 people by creating a scalable pipeline, detailed training materials, and hosting tutorial sessions.
* Improved consistency and quality of medical animations at gross, cellular and molecular scales for hundreds of animations and illustrations with production templates, and creating tools and techniques for production.
* Improved quality of 90% of gross anatomy animations by registering, segmenting, and repairing the 4k film scans from the Visible Human Project.
* Attracted new clients directly interested in company based on compelling visual development and fluid simulation.

**R&D Staff** (2008-2013)

* Increased company’s technology portfolio to over 40 plugins for 3dsmax and fusion by co-founding r&d team.
* Increased company’s capabilities, accepting over $4.5 million in additional contracts by creating stereoscopic animation, surgical simulations, and other interactive products.
* Increased code performance by up to 20x by rewriting image processing tools to be multithreaded to use all cpu cores and use CUDA or openCL for gpu saturation.
* Provided flexibility to artists to convert data between volumetric representation and polygonal data and back with tools written in c++ and OpenGL.

**Surgical Simulation** (2010-2013)

* Produced highly interactive surgical simulators for iPad for client, Ethicon, Inc.
  + Allowed immersive experience supporting simultaneous pen and touch inputs with win32 device hooks.
  + Optimized surgical product to work on low performance devices such as iPad and android tablets.
* Implemented dynamic mesh processing for live cutting of objects.
  + Created unconstrained cutting experience with a scalpel by using CGAL, c++, and .net marshaling.
* Thin client for viewing medical scans and collaborating with specialists.
  + Created differentiated product with real volumetric rendering in real time on web and mobile devices.
  + Increased interactivity to maintain high fps with auto-proxy mode that renders camera to a proxy texture.
  + Increased clarity of scans with simulated lighting via gradient analysis and spherical lookup.

# Education

William Paterson University of New Jersey *bfa* Aug 2002

# Portfolio

Videos available at <blipland.com>